FIG. 1

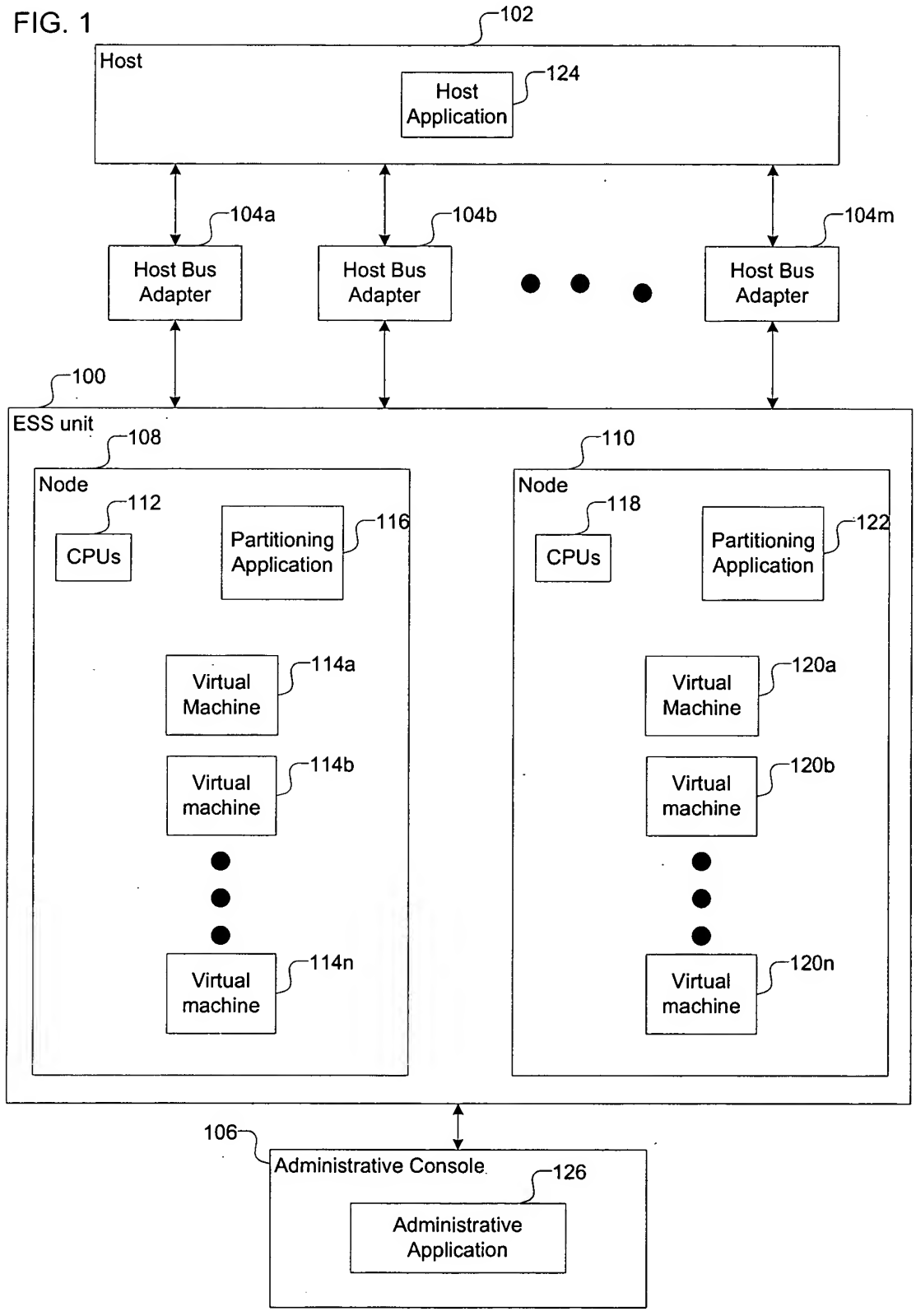

102
Host
Host Application
124
104a
104b
104m
Host Bus Adapter
Host Bus Adapter
Host Bus Adapter
100
ESS unit
108
110
Node
Node
112
CPUs
Partitioning Application
116
118
CPUs
Partitioning Application
122
Virtual Machine
114a
Virtual machine
114b
Virtual machine
114n
Virtual Machine
120a
Virtual machine
120b
Virtual machine
120n
106
Administrative Console
126
Administrative Application

FIG. 2

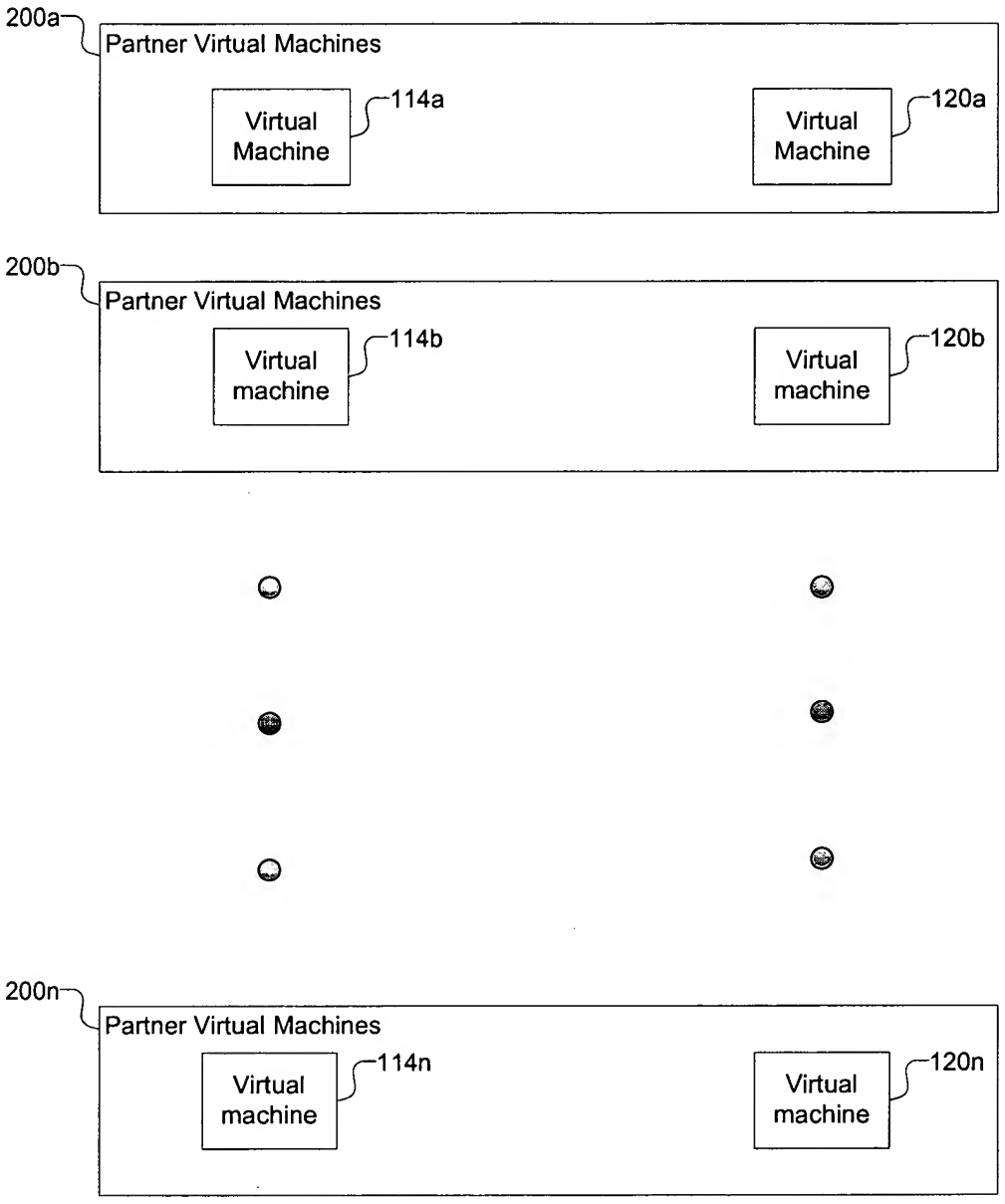

200a
Partner Virtual Machines
Virtual Machine
114a
Virtual Machine
120a
200b
Partner Virtual Machines
Virtual machine
114b
Virtual machine
120b
200n
Partner Virtual Machines
Virtual machine
114n
Virtual machine
120n

FIG. 3

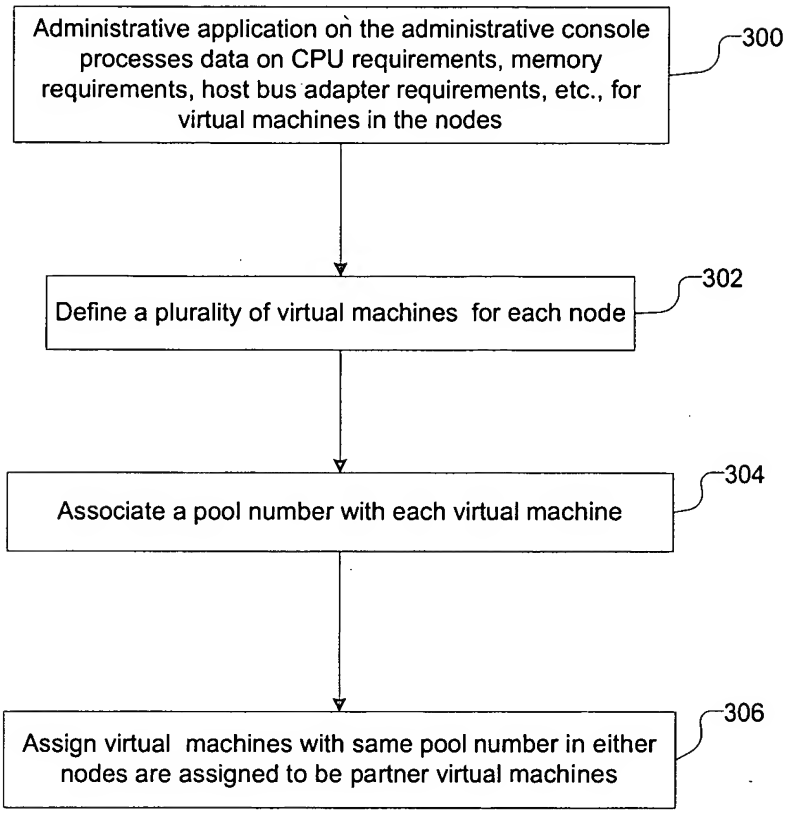

Administrative application on the administrative console processes data on CPU requirements, memory requirements, host bus adapter requirements, etc., for virtual machines in the nodes
300
Define a plurality of virtual machines for each node
302
Associate a pool number with each virtual machine
304
Assign virtual machines with same pool number in either nodes are assigned to be partner virtual machines
306

FIG. 4

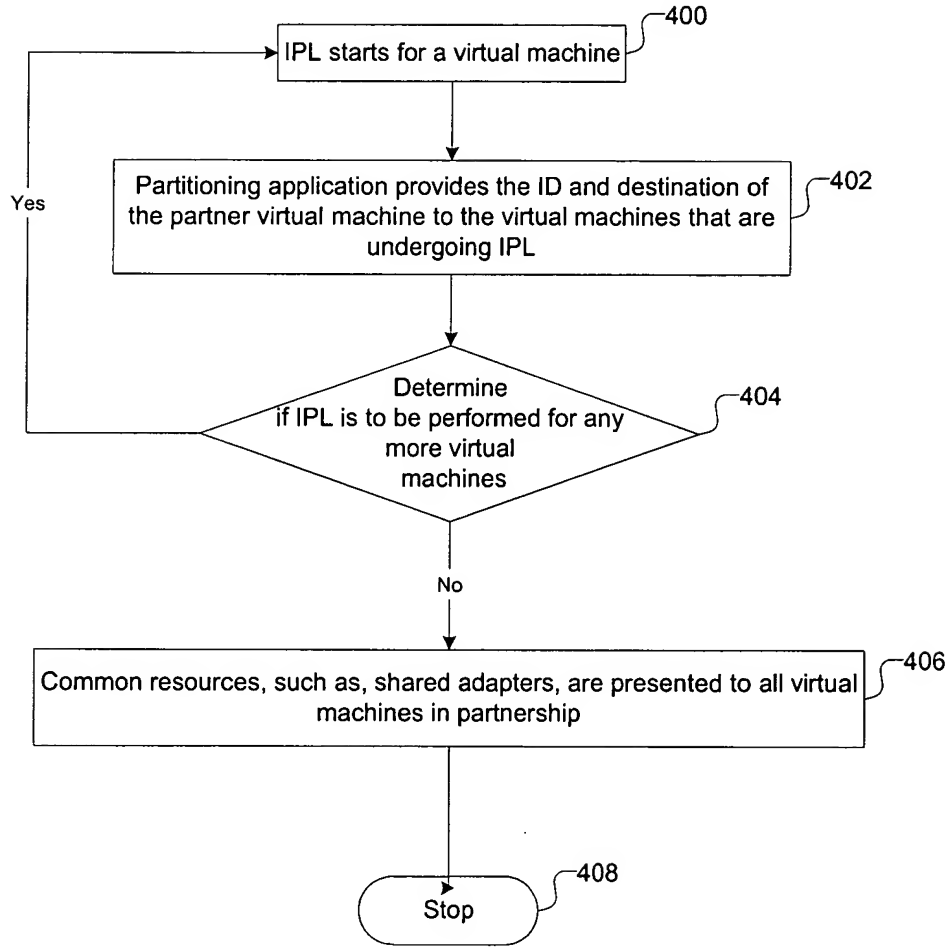

400
IPL starts for a virtual machine
Partitioning application provides the ID and destination of the partner virtual machine to the virtual machines that are undergoing IPL
402
Yes
Determine if IPL is to be performed for any more virtual machines
404
No
Common resources, such as, shared adapters, are presented to all virtual machines in partnership
406
Stop
408

FIG. 5

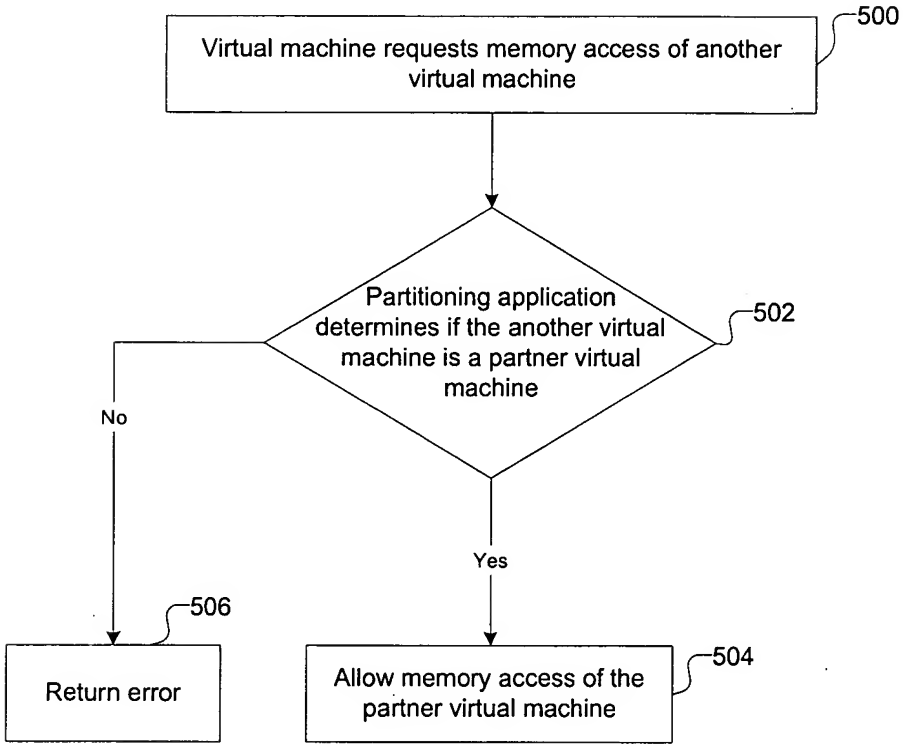

Virtual machine requests memory access of another virtual machine
500
Partitioning application determines if the another virtual machine is a partner virtual machine
502
No
Yes
506
Return error
Allow memory access of the partner virtual machine
504

FIG. 6

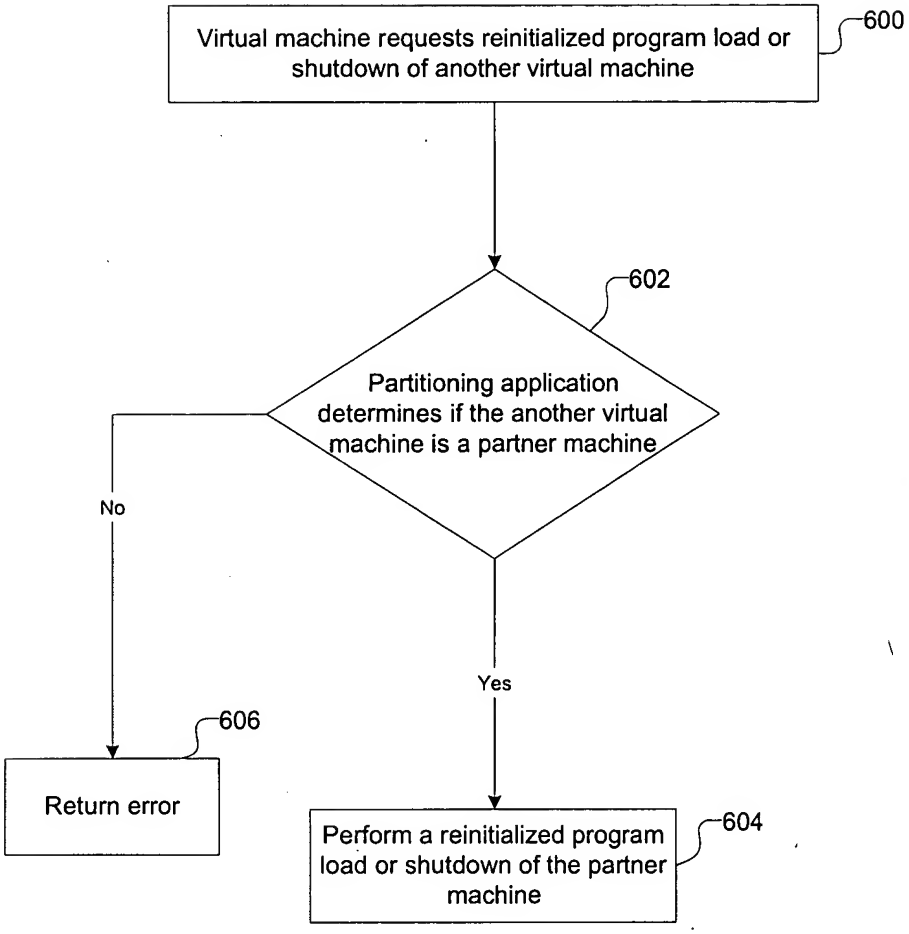

Virtual machine requests reinitialized program load or shutdown of another virtual machine
600
602
Partitioning application determines if the another virtual machine is a partner machine
No
Yes
606
Return error
Perform a reinitialized program load or shutdown of the partner machine
604

FIG. 7

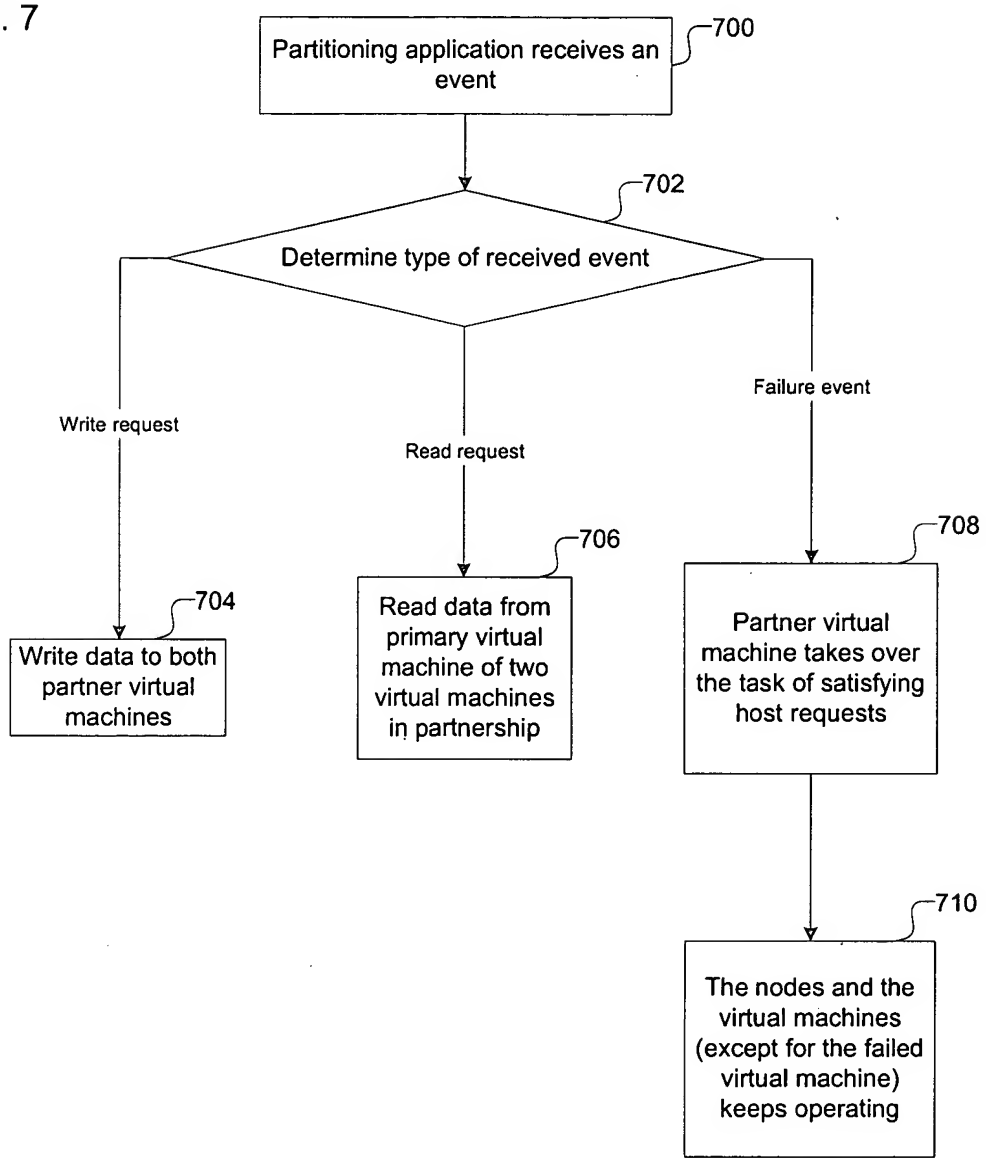
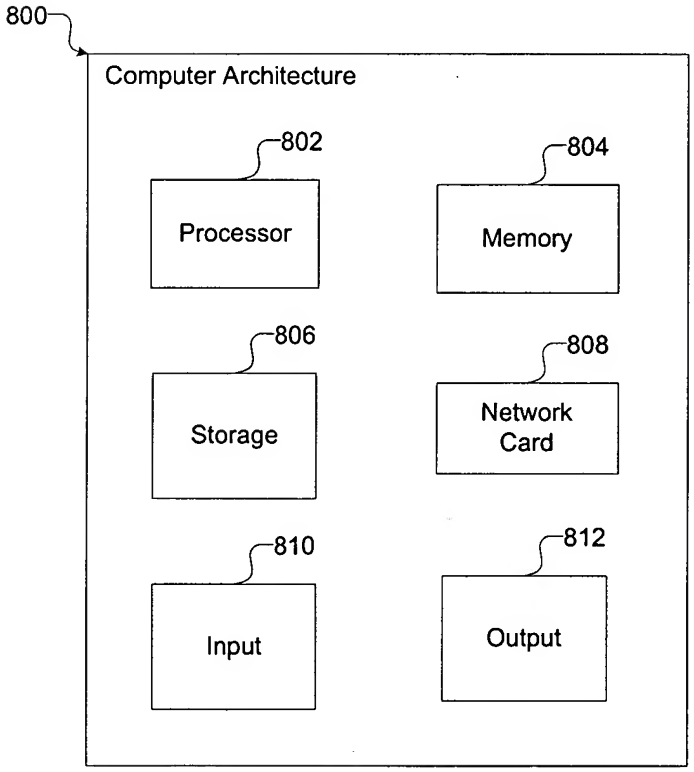

Partitioning application receives an event
700
Determine type of received event
702
Write request
Read request
Failure event
Write data to both partner virtual machines
704
Read data from primary virtual machine of two virtual machines in partnership
706
Partner virtual machine takes over the task of satisfying host requests
708
The nodes and the virtual machines (except for the failed virtual machine) keeps operating
710

FIG. 8


800
Computer Architecture
802
Processor
804
Memory
806
Storage
808
Network Card
810
Input
812
Output